



INVESTOR IN PEOPLE

24
The Patent Office
Concept House
Cardiff Road
Newport
South Wales
NP10 8QQ

CERTIFIED COPY OF PRIORITY DOCUMENT

I, the undersigned, being an officer duly authorised in accordance with Section 74(1) and (4) of the Deregulation & Contracting Out Act 1994, to sign and issue certificates on behalf of the Comptroller-General, hereby certify that annexed hereto is a true copy of the documents as originally filed in connection with the patent application identified therein.

In accordance with the Patents (Companies Re-registration) Rules 1982, if a company named in this certificate and any accompanying documents has re-registered under the Companies Act 1980 with the same name as that with which it was registered immediately before re-registration save for the substitution as, or inclusion as, the last part of the name of the words "public limited company" or their equivalents in Welsh, references to the name of the company in this certificate and any accompanying documents shall be treated as references to the name with which it is so re-registered.

In accordance with the rules, the words "public limited company" may be replaced by p.l.c., plc, P.L.C. or PLC.

Re-registration under the Companies Act does not constitute a new legal entity but merely subjects the company to certain additional company law rules.

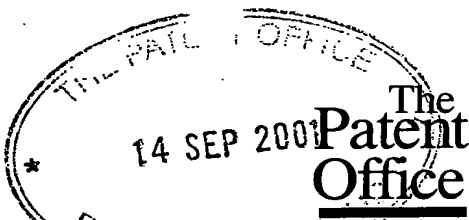
Signed

Dated

11.1.02

BEST AVAILABLE COPY

THIS PAGE BLANK (USPTO)



1/77

The Patent Office
Cardiff Road
Newport
Gwent NP9 1RH

Request for grant of a patent

(See the notes on the back of this form. You can also get an explanatory leaflet from the Patent Office to help you fill in this form)

1. Your reference	6.76008		
2. Patent application number (The Patent Office will fill in this part)	<div>14 SEP 2001</div> <div>0122276.9</div> <div>17SEP01 E000105-2 000027 P01/7700 0.00-0122276.9</div>		
3. Full name, address and postcode of the or of each applicant (underline all surnames)	Edvantage Group AS Parkveien 12 0350 Oslo Norway 08226318001 Patents ADP number (if you know it) If the applicant is a corporate body, give country/state of incorporation Norway		
4. Title of the invention	Managed Access To Data Over Data Networks		
5. Name of your agent (if you have one)	Frank B. Dehn & Co.		
“Address for service” in the United Kingdom to which all correspondence should be sent (including the postcode)	179 Queen Victoria Street London EC4V 4EL		
Patents ADP number (if you know it)	166001		
6. If you are declaring priority from one or more earlier patent applications, give the country and the date of filing of the or of each of these earlier applications and (if you know it) the or each application number	Country	Priority application number (if you know it)	Date of filing (day / month / year)
7. If this application is divided or otherwise derived from an earlier UK application, give the number and the filing date of the earlier application	Number of earlier application	Date of filing (day / month / year)	
8. Is a statement of inventorship and of right to grant of a patent required in support of this request? (Answer ‘Yes’ if: a) any applicant named in part 3 is not an inventor, or b) there is an inventor who is not named as an applicant, or c) any named applicant is a corporate body. See note (d))	Yes		

THIS PAGE BLANK (USPTO)

Patents Form 1/77

Enter the number of sheets for any of the following items you are filing with this form. Do not count copies of the same document

Continuation sheets of this form

-

Description

27

Claim(s)

3

Abstract

1

Drawing(s)

8

fs fl

10. If you are also filing any of the following, state how many against each item.

Priority documents

Translations of priority documents

Statement of inventorship and right to grant of a patent (Patents Form 7/77)

Request for preliminary examination and search (Patents Form 9/77)

Request for substantive examination (Patents Form 10/77)

Any other documents (please specify)

11. I/We request the grant of a patent on the basis of this application.

Signature

Date 14 September 2001

12. Name and daytime telephone number of person to contact in the United Kingdom

Michael J. Butler
020 7206 0600

Warning

After an application for a patent has been filed, the Comptroller of the Patent Office will consider whether publication or communication of the invention should be prohibited or restricted under Section 22 of the Patents Act 1977. You will be informed if it is necessary to prohibit or restrict your invention in this way. Furthermore, if you live in the United Kingdom, Section 23 of the Patents Act 1977 stops you from applying for a patent abroad without first getting written permission from the Patent Office unless an application has been filed at least 6 weeks beforehand in the United Kingdom for a patent for the same invention and either no direction prohibiting publication or communication has been given, or any such direction has been revoked.

Notes

- If you need help to fill in this form or you have any questions, please contact the Patent Office on 0645 500505.
- Write your answers in capital letters using black ink or you may type them.
- If there is not enough space for all the relevant details on any part of this form, please continue on a separate sheet of paper and write "see continuation sheet" in the relevant part(s) of the form. Any continuation sheet should be attached to this form.
- If you have answered 'Yes', Patents Form 7/77 will need to be filed.
- Once you have filled in the form you must remember to sign and date it.
- For details of the fee and ways to pay please contact the Patent Office.

THIS PAGE BLANK (USPTO)

76008.615

Managed Access To Information Over Data Networks

5 This invention relates to the managed access to
information over data networks such as the Internet or
corporate local area or wide area networks. The
invention is of particular interest in the field of
learning management systems in which users are provided
10 with access to educational content. However, the
invention is also relevant to managing access of users
to other types of information such as technical
databases, financial data and so forth.

Education has been a key process in the maintenance
15 and development of every civilised society. In the 20
century, the development of methods and technology for
remote education has become increasingly important.
Distance learning using communication by mail has become
a popular method of education which is of particular
20 interest to those who are employed and do not have time
for a full time education at a college. Broadcasting of
educational material by radio or television at a
predetermined time is another way in which educational
material method. Another remote education method uses
25 video media. It is also known to have a video
conferencing system, in which a teacher and a student
view each other via a video link. In one system,
educational material is distributed through a general
network. In this network a dedicated videophone system
30 and a whiteboard system, which can share data via
computers, are linked via a local area network (LAN) or
a wide area network (WAN).

The above-described conventional remote education
methods generally cause users to be restricted by time
35 and / or location. It can be difficult to increase the
number of users and prepare a variety of flexible
educational contents.

With the increasing use of the Internet, remote learning systems have been developed which enable people to access educational courses from anywhere in the world, at any time, by using e.g. a browser such as Microsoft Internet Explorer (Trade Mark). An educational establishment hosts a site with one or more educational courses, and users who are registered may log on to the site and access the appropriate course. This type of system is often referred to as "e-Learning". In the last few years, computer systems that enable the delivery, management, and administration of enterprise-wide learning, known as Learning Management Systems (LMS) have become increasingly popular. Learning Management Systems are suites of tools that deliver the proper course or content to the students, at the proper time, in the proper format. An LMS typically provides registration capabilities for all types of learning events, student home pages, automated course catalogues, classroom resource management, skills management, records and content keeping, and delivery of e-Learning courses. Marc J. Rosenberg describes a detailed definition in prior art of the core capabilities of an LMS, in E-Learning: Strategies for Delivering Knowledge in the Digital Age, McGraw-Hill Books, 2001 pp162. First, by this definition, the LMS may have a common online course catalogue, a common online registration system and an up-front competency assessment tool. The LMS may have the ability to launch and track e-Learning and perform e-Learning assessments and perform management of learning materials. After integrating knowledge management resources the LMS may perform customised reporting, support collaboration and knowledge communities and integrate the information into the respective system, e.g. a human resources system used in the management of an organisation.

In a conventional Learning Management System, the educational content is provided by a content developer

and integrated into the LMS. For example, the information may be supplied by the content provider on one or more CD's or other media, and copied into the LMS system. A student interfaces with the LMS and the
5 content is provided to the student by the LMS. This imposes limitations. The computing and network demands on the system will limit the number of users and the number of courses that can be accessed. There will also be problems if the content varies frequently, and this
10 will be a particular problem if this type of system is used not only for education but also for accessing financial data or constantly changing databases of information.

Viewed from one aspect, the present invention
15 provides a system for providing a user with access to an information site hosting information with controlled access, in which there is provided a management site remote from the information site, the user logs on to the management site and the user is authenticated by the
20 management site, the user requests the management site for access to information which is hosted at the information site, the user is logged on to the information site with authenticated access to the information, and there is direct communication between
25 the user and the information site, wherein there is direct communication between the management site and the information site for exchange of management information.

In one preferred implementation of the invention, the management information comprises data relating to
30 the user's activities on the information site. This is provided from the information site to the management site and stored on the management site for analysis. In another preferred implementation, the management information is user authentication data provided by the
35 management site. Thus, the information site may carry out an authentication check using data provided by the management site to confirm that the user has been

authenticated by the management site for access to the information. Preferably, both of these functions are provided..

Thus, in accordance with the invention it is possible to have the advantages of an LMS, for example, in terms of management facilities and ease of use for a user, whilst having the ability to provide a greater volume of information, in terms of the sources of information, quantity of information and number of users. The user communicates directly with the information site to receive the information, and it does not have to be integrated into and hosted on the management site. It will be appreciated that when using the expression "direct communication" it is recognised that there may be many lines of communication, intermediate servers and so forth in the physical path of communication. The significance of the expression is that the information is hosted remotely and is not stored locally as part of the management site, and that management information is not channelled through the user.

In a practical implementation, a user at a PC will log on to the management site using the Internet or a corporate Intranet. After conventional authentication routines, such as entering a user name and password, the user selects a course to which he or she is permitted access. The user's browser is then directed to the information site, and if appropriate, basic authentication information such as the user name and password can be passed automatically from the user to the information site. The information site will communicate with the management site to check that the user has been authorised by the management site to access the information, and when this is established the information such as a learning course will be presented in the conventional manner. However, the information can be presented on the user's screen within a standard

format defined by the management site, so that the user has a standard interface regardless of the source of information. When the users logs out of the system, the information site provides management information to the management site. In the case of an educational course, this could be a progress report, time spent, standard reached and so forth. In the case of a technical database, the management information could include details of the number of documents requested and the fees payable. Preferably, the management site and information site use an identifier to denote a particular session, and not just a particular user, to monitor access to the information.

The protection sought is not limited to the system as a whole, whose components could be distributed over a number of countries, but to individual components.

Thus viewed from another aspect the present invention provides data processing means for use at a management site in the system described above, configured to provide a user with access to an information site hosting information with controlled access, the data processing means being arranged to authenticate a user, to receive a user request for access to information which is hosted at the information site, to arrange for the user to be logged on to the information site with authenticated access to the information by means of direct communication between the user and the information site, the data processing means also establishing direct communication between the management site and the information site for exchange of management information.

Viewed from another aspect, the present invention provides data processing means for use at an information site in the system described above, configured to receive a request from a user for access to information, to communicate directly with the user for supply of the information, and to communicate directly with the

management site for exchange of management information.

Viewed from another aspect the present invention provides computer software which when run on data processing means will configure the data processing means for use in a management site or information site as set out above. the software may be provided on physical media such as a CD-ROM or tape, or as signals from a remote site sent over e.g. a network such as the Internet, or by means of terrestrial or satellite broadcasting, for example.

In the following discussion of preferred features of the system, a system in accordance with the invention will be referred to as an "Open Learning Management System" or "OLMS".

In a preferred implementation of the invention, a single source system (SSS) operates as a hosted solution through a portal on a digital distributor such as the Internet and seamlessly integrates content from different sources, using technology and services in an open learning management system (OLMS). The OLMS implements the material into a form suitable for a student, in the case that the content is e-Learning. Using a course tracking system, the OLMS logs all the activities performed with the content and the resources by the users of the system and stores the activity information for future use. Use may be by company human resources (HR) systems/organisations where the students are employed, or other customers. A log of activity generated by the students of the SSS is provided, either as data exchange, or as an integrated part of the external receivers of resources and systems. A major advantage of the system is that the students do not need logins at the external content developers, specialist technology in the form of hardware/software, or retrieval of any specialist services, but obtain all elements needed for e-Learning at one point.

The OLMS preferably has all the capabilities of a

state of art LMS. In addition, the functionality of the OLMS is integrated in a portal solution, and is open in a way that any content can be integrated, and data exported to any HR systems. A prior art traditional LMS including content managed by the LMS is located at a specific computer such as a server, e.g in a specific database, and the content needs continuous updating. As opposed to this, an important advantage of the OLMS is that the system manages content that may be located at other computers, databases or on the servers of external content developers. Consequently, a server comprising the OLMS of the present system has a "peer to peer" communication directly with the servers of the external content developers. This gives two important advantages for the user of the system, namely it provides flexibility to be able to compose the learning program freely according to needs, and the students do not need logins at the sites of the content developers.

The content developers, i.e. the agents/vendors developing content may be of various types. There are various schools, universities, companies that develop content for digital distribution, and also organisations that develop company/organisation specific or general content. A typical course comprises a sharable, educational object consisting of one or more "Assignable Units" (AU's) which are the smallest units of information that the system assigns and tracks. An AU is part of a course or an education program that gives the learner understanding of a specific subject. As opposed to e.g. typical university courses, that often have a fixed pattern of functionalities and facilities, courses built of AU's may be flexible and changeable to be adapted to the users need. Content may also be divided into content objects which are self-contained or self-instructive units of content, such as a chapter of a course on a specific subject.

The course is preferably described by a specific

standard. For example, a course may be exemplified by, but not limited to, the SCORM (Sharable Content Object Reference Model) standard. SCORM (TM) is a reference model that defines a Web-based learning "content model" and is a set of interrelated technical specifications, that designed to meet e.g. the demands of authorities for a high level reliable and robust standard. SCORM is a standard to generate an evolving document to collect all the "bits and pieces" in one place.

10 The content may be any information provided by external vendors for the OLMS to provide to the users of the single source system. This may include e-Learning /Educational resources such as courses, presentations, activities, assessments, tutors etc. The
15 content could be any combination of text, graphics, video and audio. The content could be a combination of synchronic (live or not) or asynchronic education. Synchronic learning is learning that is dependent on time. Users can only access content at scheduled
20 sessions. The synchronic learning content could be pictures and audio of a teacher, either live or recorded and played back at a specified time. By contrast, a-synchronic learning is learning that is independent on time, that makes it possible for the user to receive any
25 part of the education at any time.

 The content could be an MBA program or a language course, for example. It may be divided into categories such as general education, working skills, and personal development. An MBA program is an example of general
30 education. Working skills content is related to the learners working situation. Content for personal development could be time management and language skills. The expression "soft skills" can be applied to non-technology-related, people-oriented skills such as
35 leadership, marketing, and human relations. A complete, shareable learning program could be composed of a combination of various content, with the purpose of

providing knowledge, training or education to a user within a specified field.

Implementation of a system will involve the stepwise process of choosing content, building solutions (such as portals and communities), implementing follow-up systems and design, and support implementation programs. A portal is a doorway or gateway to content on a computer network. The portal can serve as a single location where the users access content. An e-Learning portal can be educational content consolidated into one web site that is accessible to the users.

A user is a verified and identified person or program accessing the system. The user is given access to content based on access rights given by system administrators. The users could be organisations, groups of persons or single persons. Students, administrators and HR systems are examples of users. A student is a single human user of the content. An administrator is a company, organisation or person who administers the OLMS and arranges for the single source solution to be provided to users.

The preferred system meets the need of seamless integration of content from external content developers, providing flexible availability of the content to users in a single system, making it possible for the users to compose their own learning programs.

Some preferred embodiments of systems in accordance with the invention will now be described by way of example and with reference to the accompanying drawings, in which:

Figure 1 is a diagram showing the organisation of a traditional Learning Management System;

Figure 2 is a diagram of one embodiment of a system in accordance with the invention;

Figure 3 diagram showing the organisation of a traditional Learning Management System showing how multiple users are handled;

Figure 4 is a diagram of one embodiment of a system in accordance with the invention, showing how multiple users are handled;

Figure 5 is another overview of a system in accordance with the system;

Figure 6 is a more detailed schematic overview of part of a system in accordance with the invention;

Figure 7 is a screen shot of a user logon screen;

Figure 8 is a screen shot of a typical list of courses available;

Figure 9 is a screen shot of information about a typical course;

Figure 10 is a screen shot of information about user activity on a course;

Figure 11 is a screen shot of a change password screen;

Figure 12 is a screen shot of a user profile update screen;

Figure 13 is a diagram showing what happens when a user wants to access a course; and

Figure 14 is a diagram showing what happens when a user logs out from a course.

Figure 1 shows a conventional LMS system. As shown at 1, a content developer delivers content that is integrated into the LMS. At 2, a student accesses the content by entering the LMS system. At 3, use of the system and content by the student is tracked by the LMS. At 4, information about user activities is accessed from the LMS by the student and other users such as administrators.

Figure 2 shows how the OLMS in accordance with the present invention is configured. At 1, a content developer produces external content, and in this case it is integrated into an LMS such as an on-line university education system. At 2, a student accesses the OLMS and requests access to content. At 3 the OLMS provides instructions for communicating with the external

content. At 4, the student accesses the external content system directly, and at 5 the OLMS deals directly with the external system to authorise the student. The student then accesses the external content directly, at 5 6. At 7, the external system reports to OLMS, and at 8 information is made available from OLMS to the student and other users.

Figure 3 illustrates a prior art method of including other students. The content developer provides content which a student accesses in an LMS. The students are isolated within the organisation / LMS system. The content developers produce a single copy of the content for each LMS and the student accesses this copy, not a learning environment of the content developer. The 10 information is limited to the LMS. In Figure 4, by contrast, The content provider provides content to an LMS, as in Figure 2. By means of the OLMS at a particular organisation, a student can access this content as can other students at the same organisation. 15 External students, not connected with the organisation, can connect to the LMS in the normal manner. Students from different companies or organisations, or private individuals, can be connected in a common virtual learning environment. Information to a student includes results from the total learning environment within the 20 external content developer. 25

Figure 5 is an overview of a system in accordance with the invention, in which the OLMS may contain integrated content from content developers, as well as the external content which students will be connected to 30 directly. The student accesses all content from a single source, and the content is not limited to specific standards or formats. The student may obtain information from both the OLMS and the external content providers, . 35 Other users could be not only companies, organisations or individuals, but also systems such as a human resources system.

As shown in Figure 6, At the heart of the Open LMS is the Core API (Application Programmer's Interface). This API provides access to the core business logic with generic functionality for storing, retrieving and
5 manipulating content information and data related to user activities. Content objects are integrated with the OLMS by adding a thin layer of protocol adapters on top of the Open LMS Core API, illustrated as Protocol
10 Adapters 1 to n which are associated with content from vendors A to X. The adapters are responsible for launching the content objects and for exchanging user activity information with them. This means that there is no need to change the complex business logic of the core API to integrate a new type of content object. It also
15 means that the OLMS can support the different e-Learning standards as well as the proprietary formats often used in more complex academic courses and such like. The adapters map the request formats used by the different content objects to the formats used in the core API to
20 exchange user activity information. All information about the content objects themselves and their related user activities, is stored in a uniform way regardless of the original format. Other systems using the services provided by the OLMS may then completely disregard the
25 different technical implementations of the content objects.

As noted earlier, the adapters are responsible for launching the content objects. The content objects themselves may be hosted externally on another server
30 than the OLMS. To access these externally hosted content objects, the OLMS also handles authentication of the individual user on the external server. This is accomplished by appropriating information stored in the OLMS to the formats and methods used by the remote
35 content server for launching the course. In other words, the user needs only interact consciously with one system regardless of where the content objects are actually

located and what technology they are based on.

A significant advantage for the student is that due to the openness in the system, he/she has one access point to all e-Learning content, access to external content without anew log in, and being a part of an extended (more than company's or a particular provider's) e-Learning network. The user's experience of the content is the same whether it is integrated and hosted by OLMS or external content hosted by external content provider. The student accesses one course catalogue where all the content is presented the same way. Thus, the following are presented and work in the same way:

- Information
- Accessing of content
- Information of status/score etc
- Other functionality

Information like course, functionality and vendor descriptions are presented identically throughout the portal. The course structure (course ID, topic areas) are built and presented the same way independent of vendor. The student uses the same functionality to access "free" content, getting information of applying for restricted content regardless of vendor or signing up for use of other resources like virtual classroom sessions. Available information is presented the same way to the student even if the courses are hosted externally.

As shown in the screen shot of Figure 7, a user logs into an OLMS (in this case "eLearning.EdVantage") in accordance with the invention by giving a user name and password. Figure 8 shows how a user can have access to a range of courses, provided by different sources. Figure 9 shows how the OLMS, using the same interface, enables a student to have access to a course - in this

case a course on "Advanced Presentation Skills" provided SkillSoft (TM). From the same screen, the user can search for additional resources e.g. by looking for books through "Amazon.co.uk" (TM). As shown in Figure 5.10, a student may access information on course progress, scores etc. provided by the external course provider, still using the same interface.

Additional functionality is also consistent throughout the portal. This includes updating a user's password or profile as shown in Figures 11 and 12. This may include customisation of language and time zone. It is easy for a student to create a personalised curriculum or course list by adding and removing courses to "My Courses" using simple icons. The system may also print a diploma for completed courses.

A particular advantage to other users/administrator is the openness in the OLMS which make it possible to use information as input in any existing HR system. This means one report can be provided with statistics/metrics etc. including all different vendors/systems. It also provides a consistent way to:

- Add and remove users
- Add and remove content
- 25 - Obtain statistics of system access, course started, course completed etc.
- Set restrictions
- Give access to restricted content
- Schedule "meetings" in a virtual classroom
- 30 - Access other resources

Some content may be restricted and require specific attention. This could be caused by high cost of a particular course, or a course with a fixed starting date. In this case a student would get an application form or instructions from the system.

Collaboration tools are provided, for example to

provide a virtual classroom and similar. Users can be given on-line lecturers and presentations, and can give input/feedback.

Figure 13 is a diagram showing the steps taken when user connects to the OLMS ("Edvantage") and requests access to a course. In this example it is a course provided by an external vendor "Academee" (TM). The user requests logon to Academee. A request is made to Academee with the following parameters:

10

The Academee email address for the user requesting the course - acdmEmail

15

The Academee ID of the requested course
edgHost - acdmCourseID

The Edvantage host name exclusive domain - edgHost

20

The current session ID at Edvantage - edgSession

The user's ID in Edvantage - edgUserID

The Edvantage ID for the course - edgCourseID

25

The request is processed and there is an authentication callback to Edvantage with the following parameters:

30

Current Session ID

Edvantage User ID

Edvantage Course ID

35

The callback to Edvantage is sent as a "GET" to the host:

http://<host>.edvantage.net/servlet/SessionValidatorServ

```
let?edgSession=<edgSession>&edgUserID=<edgUserID>  
&edgCourseID=<edgCourseID>
```

If the session ID is validated and authentication is
5 successful, a response is made to Academee and the user
will be logged on to the course.

When a user logs out from the course, the procedure
is as shown in Figure 14. A request is made to Edvantage
with the following parameters:

10

servername (exclusive domain)

Academee session ID

Academee email address

Course data

15

Edvantage user ID

Edvantage course ID

The Course Data could be as follows:

20

edgUserID - the user's ID in Edvantage

edgCourseID - Edvantage's ID for the course

acdmSession - current Academee session ID

acdmCourseID - Academee course ID

acdmEmail - Academee email address

25

firstAccess - date of first access ('yyyy-mm-dd
hh:mm:ss')

lastAccess - date of last access ('yyyy-mm-dd
hh:mm:ss')

visits - the number of visits

30

activitiesCompleted - the number of completed
activities

activitiesRemaining - the number of remaining
activities

sectionsCompleted - the number of sections
completed

35

expectedCompletionDate - the expected completion
date ('yyyy-mm-dd hh:mm:ss')

percentageCompleted - the percentage completed

The request is processed and there is an authentication callback, i.e. a request to Academee with parameters Academee session ID and Academee e-mail address. The session ID is validated and there is a response to Edvantage if authentication is successful. If the status is OK, then the results are stored.

Java code for carrying out operations could be as follows. This is by way of example for information purposes only and copyright is reserved except to the extent that it is necessary to reproduce the code for an understanding of the disclosure.

```
15  import
    javax.servlet.http.*;java.sql.*;java.io.IOException;java
    x.servlet.ServletException;net.edvantage.util.*;net.edva
    ntage.cts.db.*;net.edvantage.cts.adapter.*;java.util.*;j
    ava.net.*;/** @author zzz, zzz@edvantagegroup.com*
20  @version $Id: CTSAcademeeServlet.java,v 1.5 2001/07/18
    17:08:47 zzz Exp $*/class CTSAcademeeServlet extends
    HttpServlet {
        public void doGet (HttpServletRequest req,
        HttpServletResponse res) throws ServletException,
25  IOException {
            // Get all relevant parameters
            String strEDGUserId =
            req.getParameter("edgUserID");
            String strEDGCourseId =
30  req.getParameter("edgCourseID");
            String strACDMSession =
            req.getParameter("acdmSession");
            String strACDMCourseId =
            req.getParameter("acdmCourseID");
35  String strACDMEmail =
            req.getParameter("acdmEmail");
            String strFirstAccess =
            req.getParameter("firstAccess");
            String strLastAccess =
40  req.getParameter("lastAccess");
            String strVisits = req.getParameter("visits");
            String strActivitiesCompleted =
            req.getParameter("activitiesCompleted");
            String strActivitiesRemaining =
45  req.getParameter("activitiesRemaining");
            String strSectionsCompleted =
            req.getParameter("sectionsCompleted");
            String strExpectedCompletionDate =
            req.getParameter("expectedCompletionDate");
```

```
String strPercentageCompleted =
req.getParameter("percentageCompleted");
String strAcademeeHost =
req.getParameter("acdmHost");//System.out.println("The
5 following lines are printed from CTSAcademeeServlet
doGet:");
//System.out.println("edgUserID=" +
strEDGUserId);//System.out.println("edgCourseID=" +
strEDGCourseId);
10 //System.out.println("acdmSession=" +
strACDMSession);//System.out.println("acdmCourseID=" +
strACDMCourseId);
//System.out.println("acdmEmail=" +
strACDMEmail);
15 //System.out.println("firstAccess=" +
strFirstAccess);
//System.out.println("lastAccess=" +
strLastAccess);
//System.out.println("visits=" + strVisits);
20 //System.out.println("activitiesCompleted=" +
strActivitiesCompleted);
//System.out.println("activitiesRemaining=" +
strActivitiesRemaining);
//System.out.println("sectionsCompleted=" +
25 strSectionsCompleted);
//System.out.println("expectedCompletionDate="
+ strExpectedCompletionDate);
//System.out.println("percentageCompleted=" +
strPercentageCompleted);
30 //System.out.println("acdmHost=" +
strAcademeeHost);
// Check if all parameters needed for
handshake with Academee is present. If not send error
if (strAcademeeHost == null) {
35 res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmHost");
}
else if (strACDMSession == null) {
40 res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmSession");
}
else if (strACDMCourseId == null) {
45 res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmCourseID");
}
else if (strACDMEmail == null) {
50 res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmEmail");
}
else {
55 // TODO: got to check this with Academee
```



```
String strQuery = "acdmSession=" +
URLLEncoder.encode(strACDMSession) + "&acdmEmail=" +
URLLEncoder.encode(strACDMEEmail)
5

+ "&acdmCourseID=" +
URLLEncoder.encode(strACDMCourseId);
10

Hashtable hshValidation =
SessionValidator.validate("http://www." +
strAcademeeHost + ".com/edvantage/reportValidate.asp?" +
15

strQuery);

int intResponseCode =
25 Integer.parseInt((String) hshValidation.get("status"));

if (intResponseCode !=
HttpServletResponse.SC_OK) {
30
    res.sendError(intResponseCode);
}
else if (strEDGUserId == null) {
35
    res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: edgUserID");
}
else if (strEDGCourseId == null) {
40
    res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: edgCourseID");
45
}
else if (strFirstAccess == null) {
50
    res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: firstAccess");
}
else if (strLastAccess == null) {
55
```

```
res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: lastAccess");

    }
5      else if (strVisits == null) {

res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: visits");
10      }

      else if (strActivitiesCompleted == null) {

15      res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: activitiesCompleted");

      }

      else if (strActivitiesRemaining == null) {
20      res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: activitiesRemaining");

25      }

      else if (strSectionsCompleted == null) {

res.sendError(HttpServletResponse.SC_BAD_REQUEST,
30      "Missing field: sectionsCompleted");

      }

      else if (strExpectedCompletionDate == null) {

35      res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: expectedCompletionDate");

      }

40      else if (strPercentageCompleted == null) {

res.sendError(HttpServletResponse.SC_BAD_REQUEST,
45      "Missing field: percentageCompleted");

      }

      else {
//System.out.println("CTSAcademeeServlet (Stores
data on our side): OKEY DOKEY: correct data received");
50      }

    }
}

} //end doGet
55      /** * Documentation to follow
    */ public void doPost (HttpServletRequest req,
```

```
HttpServletResponse res) throws ServletException,  
IOException {
```

```
    net.edvantage.util.Authenticator.authenticate(req, res);  
5      HttpSession session = req.getSession(false);  
      Connection con = null;  
      // Get all relevant parameters  
      String strEDGUserId =  
10     req.getParameter("edgUserID");  
      String strEDGCourseId =  
      req.getParameter("edgCourseID");  
      String strACDMSession =  
      req.getParameter("acdmSession");  
      String strACDMCourseId =  
15     req.getParameter("acdmCourseID");  
      String strACDMEmail =  
      req.getParameter("acdmEmail");  
      String strFirstAccess =  
20     req.getParameter("firstAccess");  
      String strLastAccess =  
      req.getParameter("lastAccess");  
      String strVisits =  
      req.getParameter("visits");// Changed variable &  
      parameter name to "activitiesComplete"  
25     String strActivitiesComplete =  
      req.getParameter("activitiesComplete");  
      String strActivitiesRemaining =  
      req.getParameter("activitiesRemaining");// Changed  
      variable & parameter name to "sectionsComplete"  
30     String strSectionsComplete =  
      req.getParameter("sectionsComplete");  
      String strExpectedCompletionDate =  
      req.getParameter("expectedCompletionDate");// Changed  
      variable & parameter name to "percentageComplete"  
35     String strPercentageComplete =  
      req.getParameter("percentageComplete");  
      String strAcademeHost =  
      req.getParameter("acdmHost");//System.out.println("The  
      following lines are printed from CTSAcademeServlet  
40     doPost:");  
      //System.out.println("edgUserID=" +  
      strEDGUserId);//System.out.println("edgCourseID=" +  
      strEDGCourseId);  
      //System.out.println("acdmSession=" +  
45     strACDMSession);//System.out.println("acdmCourseID=" +  
      strACDMCourseId);  
      //System.out.println("acdmEmail=" +  
      strACDMEmail);  
      //System.out.println("firstAccess=" +  
50     strFirstAccess);//System.out.println("lastAccess=" +  
      strLastAccess);//System.out.println("visits=" +  
      strVisits);//System.out.println("activitiesComplete=" +  
      strActivitiesComplete);//System.out.println("activitiesR  
      emaining=" +  
55     strActivitiesRemaining);//System.out.println("sectionsCo  
      mplete=" +
```

```
strSectionsComplete); //System.out.println("expectedCompletionDate=" +
strExpectedCompletionDate); //System.out.println("percentageComplete=" +
5 strPercentageComplete); //System.out.println("acdmHost=" +
+ strAcademeeHost); //Enumeration enu =
req.getParameterNames(); //while
(enu.hasMoreElements()) { //
10 System.out.println("ParameterNames: " + (String)
enu.nextElement()); //
//}
// Check if all parameters needed for handshake
with Academee is present. If not send error
if (strAcademeeHost == null) {
15
res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmHost");
}
else if (strACDMSession == null) {
20
res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmSession");
}
else if (strACDMCourseId == null) {
25
res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmCourseID");
}
else if (strACDMEmail == null) {
30
res.sendError(HttpServletResponse.SC_BAD_REQUEST,
"Missing field: acdmEmail");
}
else {
35
// TODO: got to check this with Academee

String strQuery = "acdmSession=" +
URLLEncoder.encode(strACDMSession) + "&acdmEmail=" +
40 URLLEncoder.encode(strACDMEmail)

+ "&acdmCourseID=" +
45 URLLEncoder.encode(strACDMCourseId);

Hashtable hshValidation =
SessionValidator.validate("http://www." +
strAcademeeHost + ".com/edvantage/reportValidate.asp?"
50 +strQuery);

int intResponseCode =
Integer.parseInt((String)
55 hshValidation.get("status")); //System.out.println("The
response code upon session validation is: " +
```

```
intResponseCode);

    //System.out.println("SC.OK: " +
    HttpServletResponse.SC_OK);
5
    if (intResponseCode !=
    HttpServletResponse.SC_OK) {
10        // Write a meaningful errortext to the system
        log saying that the session at academeecould not be
        validated or something like that.

        res.sendError(intResponseCode);
15
    }
    else if (strEDGUserId == null) {
        res.sendError(HttpServletResponse.SC_BAD_REQUEST,
20        "Missing field: edgUserID");
    }
    else if (strEDGCourseId == null) {
25
        res.sendError(HttpServletResponse.SC_BAD_REQUEST,
        "Missing field: edgCourseID");
    }
30    else if (strFirstAccess == null) {

        res.sendError(HttpServletResponse.SC_BAD_REQUEST,
        "Missing field: firstAccess");
35
    }
    else if (strLastAccess == null) {
40
        res.sendError(HttpServletResponse.SC_BAD_REQUEST,
        "Missing field: lastAccess");
    }
45    else if (strVisits == null) {

        res.sendError(HttpServletResponse.SC_BAD_REQUEST,
        "Missing field: visits");
50
    }
    else if (strActivitiesComplete == null) {

        res.sendError(HttpServletResponse.SC_BAD_REQUEST,
55        "Missing field: activitiesComplete");
    }
```

```
    }
    else if (strActivitiesRemaining == null) {
5      res.sendError(HttpServletResponse.SC_BAD_REQUEST,
        "Missing field: activitiesRemaining");
    }
10    else if (strSectionsComplete == null) {
      res.sendError(HttpServletResponse.SC_BAD_REQUEST,
        "Missing field: sectionsComplete");
15    }
    else if (strExpectedCompletionDate == null) {

      res.sendError(HttpServletResponse.SC_BAD_REQUEST,
20      "Missing field: expectedCompletionDate");
    }
    else if (strPercentageComplete == null) {
25      res.sendError(HttpServletResponse.SC_BAD_REQUEST,
        "Missing field: percentageComplete");
    }
30    else {
      //System.out.println("CTSAcademeeServlet (Stores
        data on our side): OKEY DOKEY: correct data received");

35      try {

        con =
40      MultiDbBroker.getConnection(req.getServerName());

        // Store the data, using AcademeeAdapter

45      AcademeeAdapter.putParam(strEDGUserId,
        strEDGCourseId, strACDMSession, strACDMCourseId,
        strACDMEmail, strFirstAccess, strLastAccess, strVisits,
        strActivitiesComplete, strActivitiesRemaining,
        strSectionsComplete, strExpectedCompletionDate,
50      strPercentageComplete, strAcademeeHost, con);
      }

      catch (EdvantageException e) {

55      if (con != null) {
```

```
5      MultiDbBroker.freeConnection(req.getServerName(), con);
        }
        session.setAttribute("EDGException",e);
10      res.sendRedirect("/std/messages/Error.jsp");
        }
        catch (Exception e){
15      if (con != null) {
20      MultiDbBroker.freeConnection(req.getServerName(),
con);
        }
25      EdvantageException edx = new
EdvantageException("errorError", e,
EdvantageException.LEVEL_FAILURE);
30      session.setAttribute("EDGException",edx);
        res.sendRedirect("/std/messages/Error.jsp");
35      }
        finally {
40      if (con != null) {
        MultiDbBroker.freeConnection(req.getServerName(),
45      con);
        }
        }
50      }
        } //end doPost //end class
```

55 The system described above is a single source

educational system providing e-Learning. It is operated over a hosted solution in a computer network such as the Internet. The educational system provides individual or corporate e-Learning in a computerized or digital form and provides educational content in a standardized form, technology in the form of hard skills and soft skills for the system to be functional and services for the user of the system. One advantage of the system is that it is unnecessary for the user to log into other sources than the portal including the OLMS to receive the complete e-Learning. The present invention may comprise standard learning objects as described above. An important purpose of using standard learning objects, for example AU's (Assignable Units) as defined above as a tool, is for the system user to adapt his learning program as flexibly as possible. The AU's may be originated at a first server used by the developers of technology or content, or may be provided by the OLMS system on the server providing the e-Learning to the user of the system. In this way, a specific curriculum or learning program may be adapted and offered to the specific user.

Another advantage of the system is that the content developer may generate reporting, not only between the user and an external system, but also between the external systems, in a way that is not visible to the user of the system. Thus, the user is not distracted. The system is such that as viewed from the user, the system is a single source of content and/or resources from different sources standards as well as proprietary, 100% hosted environment. Thus, the customer does not need to invest in hardware, software or any kind of technology platform. Yet another advantage of the system is that there are significant commercial benefits related to selling and providing the service with monthly or quarterly fees based on level of content and resources and number of users. This give a low risk for

- a user of the system arranging e-Learning to a group of individual users, because of the low need to invest in different systems to provide the e-Learning. Other advantages provided by the system are uniform
5. description and access to content, uniform reporting to both user and other systems such as HR systems, and single sign-on and identification. The user "goes to" directly to the learning, and not the other way around.

CLAIMS

1. A system for providing a user with access to an
information site hosting information with controlled
5 access, in which there is provided a management site
remote from the information site, the user logs on to
the management site and the user is authenticated by the
management site, the user requests the management site
for access to information which is hosted at the
10 information site, the user is logged on to the
information site with authenticated access to the
information, and there is direct communication between
the user and the information site, wherein there is
direct communication between the management site and the
15 information site for exchange of management information.

2. A system as claimed in claim 1, wherein the
management information comprises data relating to the
user's activities on the information site which is
20 provided from the information site to the management
site and stored on the management site for analysis.

3. A system as claimed in claim 1 or 2, wherein the
management information is user authentication data
25 provided by the management site.

4. A system as claimed in claim 1, 2 or 3 where in the
management site hosts an open learning management system
and the information site is an external learning content
30 provider.

5. A system as claimed in claim 4, wherein the open
learning management system enables access to a plurality
of external learning content providers.

35 6. A system as claimed in claim 4 or 5, wherein the
open learning management system also hosts integrated

learning content.

7. Data processing means for use at a management site
in a system as claimed in any preceding claim,
5 configured to provide a user with access to an
information site hosting information with controlled
access, the data processing means being arranged to
authenticate a user, to receive a user request for
access to information which is hosted at the information
10 site, to arrange for the user to be logged on to the
information site with authenticated access to the
information by means of direct communication between the
user and the information site, the data processing means
also establishing direct communication between the
15 management site and the information site for exchange of
management information.

8. Data processing means as claimed in claim 7,
wherein the management information comprises data
20 relating to the user's activities on the information
site which is provided from the information site to the
management site and stored on the management site for
analysis.

9. Data processing means as claimed in claim 7 or 8,
wherein the management information is user
25 authentication data provided by the management site.

10. Data processing means as claimed in claim 7, 8 or
30 9, configured as an open learning management system
providing access to an external learning content
provider.

11. Data processing means as claimed in claim 10,
35 wherein the open learning management system provides
access to a plurality of external learning content
providers.

12. Data processing means as claimed in claim 10 or 11, wherein the open learning management system also hosts integrated learning content.

5 13. Data processing means for use at an information site in a system as claimed in any of claims 1 to 6, configured to receive a request from a user for access to information, to communicate directly with the user for supply of the information, and to communicate
10 directly with the management site for exchange of management information..

14. Data processing means as claimed in claim 13, wherein the management information comprises data
15 relating to the user's activities on the information site which is provided from the information site to the management site and stored on the management site for analysis.

20 15. Data processing means as claimed in claim 13 or 14, wherein the management information is user authentication data provided by the management site.

25 16. Data processing means as claimed in claim 13, 14 or 15, configured as a learning content provider for use with a management site which is an open learning management system.

ABSTRACT

A system for providing a user with access to an information site hosting information with controlled access; such as an e-Learning content provider. The user logs on to a management site such a learning management system and is authenticated by the management site. The user requests the management site for access to information which is hosted at the information site, and is logged on to the information site with authenticated access to the information. There is direct communication between the user and the information site, and also direct communication between the management site and the information site for exchange of management information. The management information comprises user authentication data provided by the management site, and data relating to the user's activities on the information site which is reported by the information site to the management site.

[Figure 2]

THIS PAGE BLANK (USPTO)

Figure 1

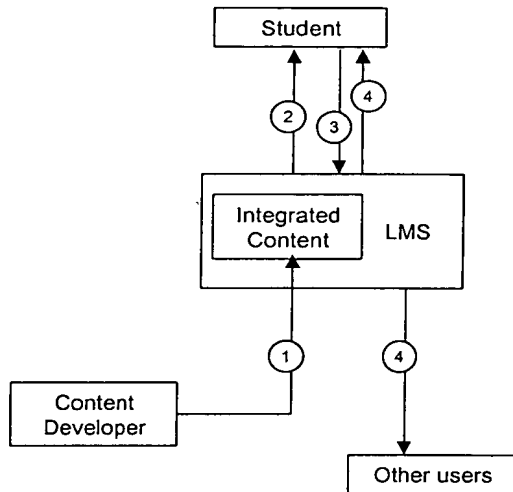
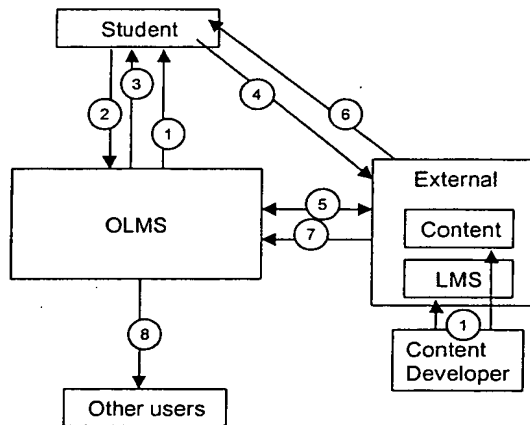


Figure 2



THIS PAGE BLANK (USPTO)

Figure 3

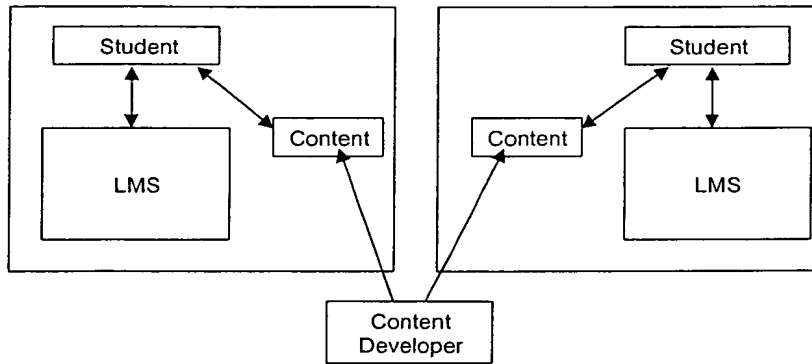
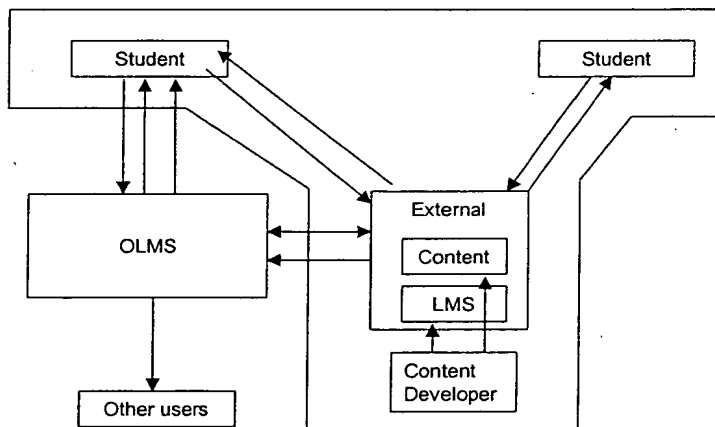


Figure 4



THIS PAGE BLANK (USPTO)

Figure 5

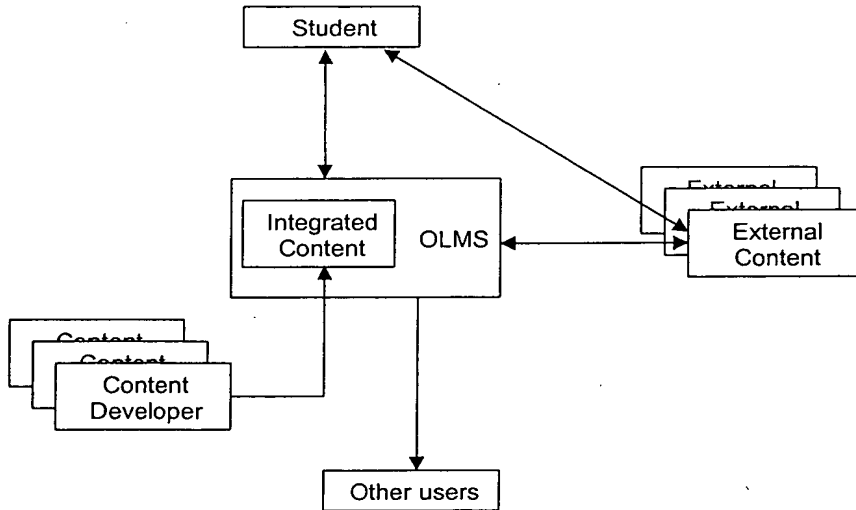
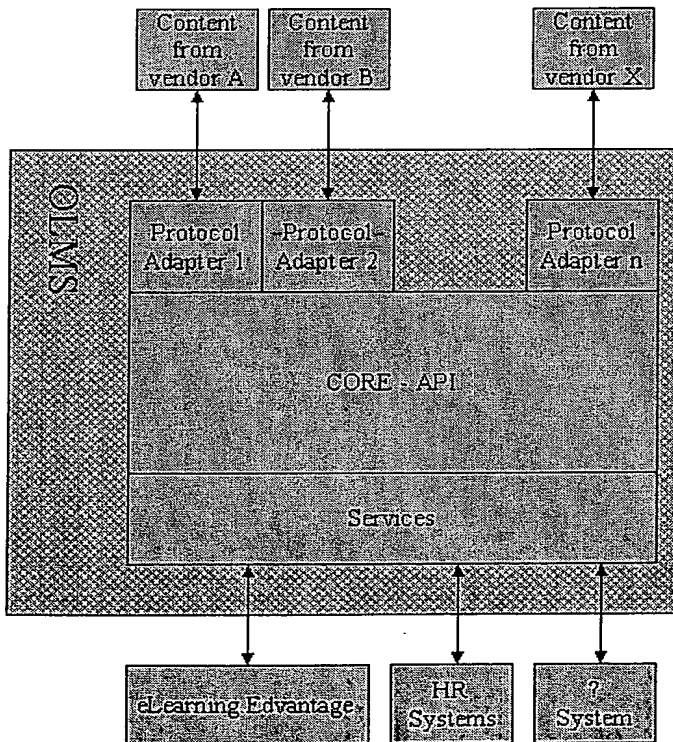


Figure 6



THIS PAGE BLANK (USPTO)

Figure 7

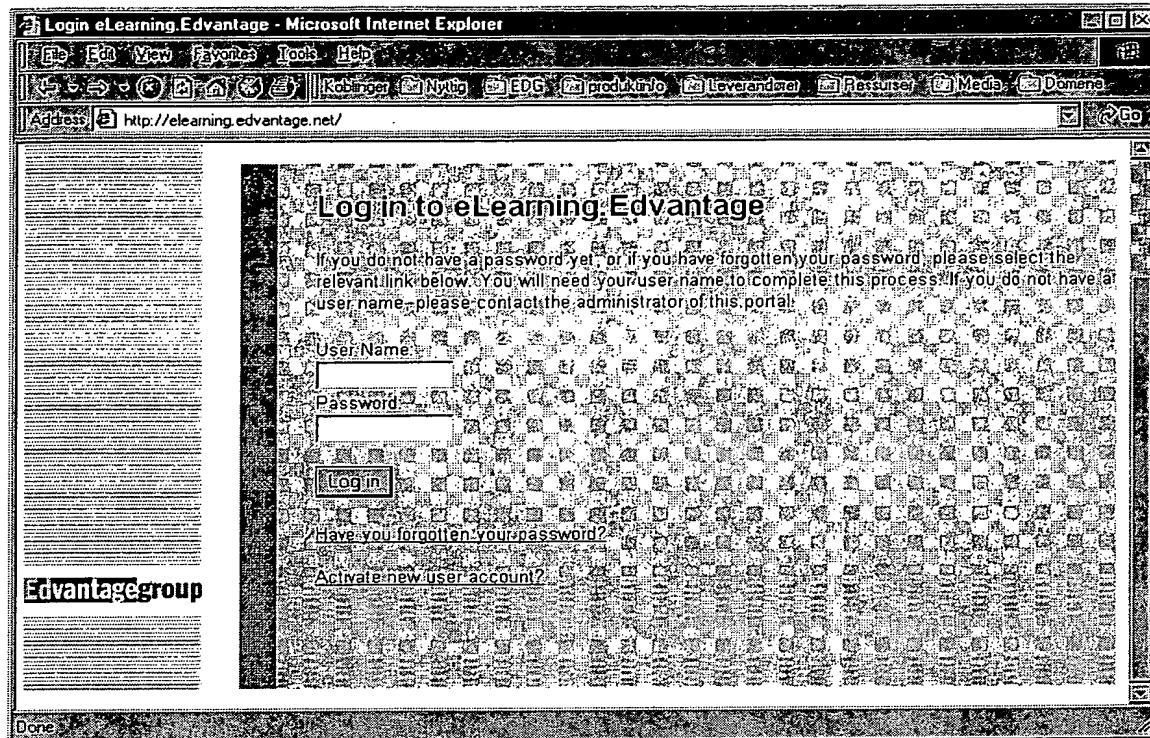
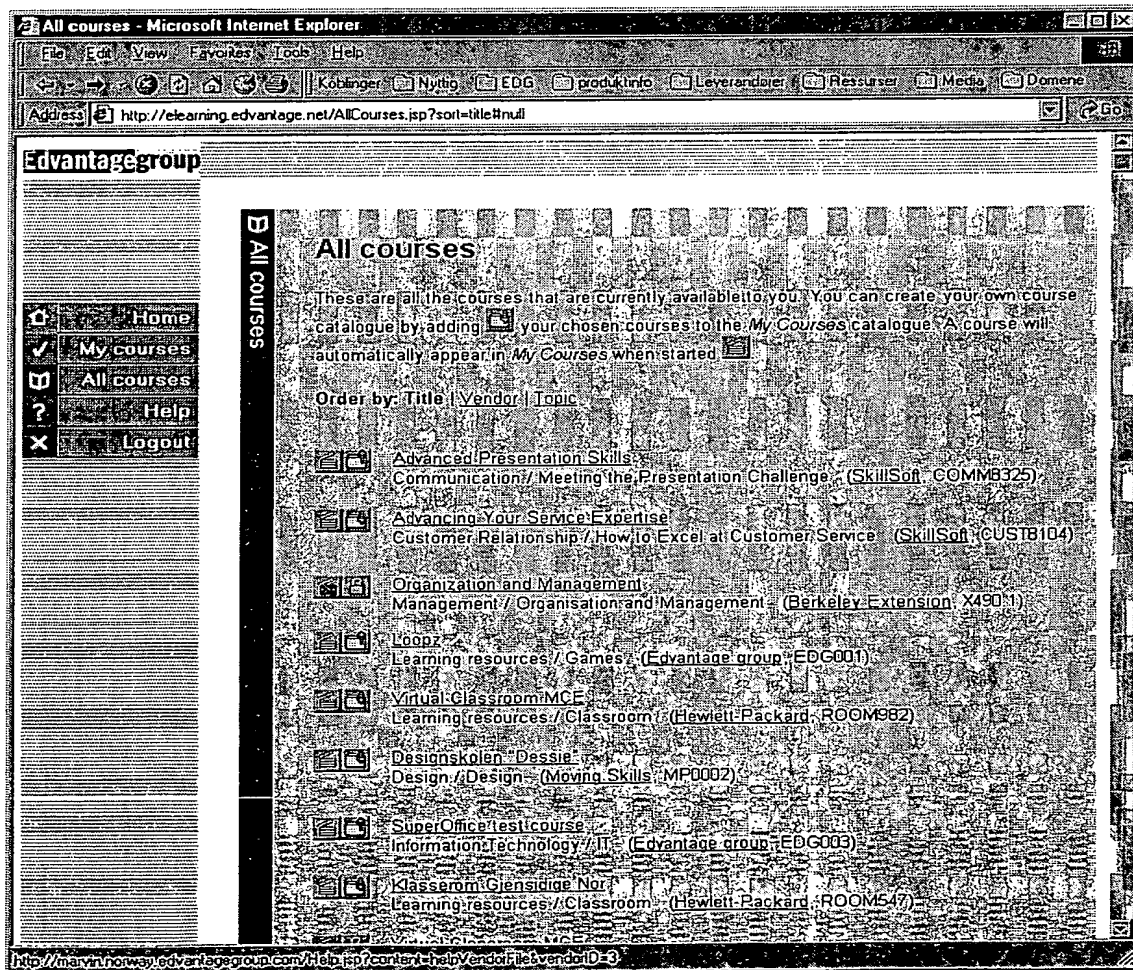


Figure 8



THIS PAGE BLANK (USPTO)

Figure 9

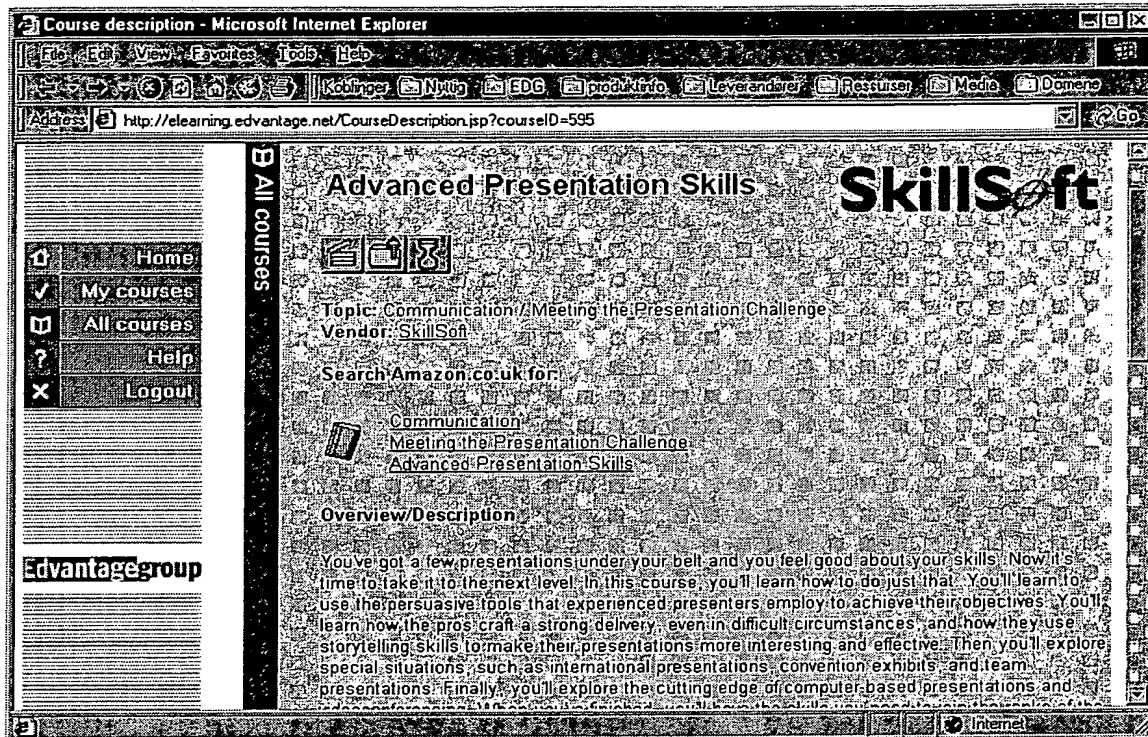


Figure 10



THIS PAGE BLANK (USPTO)

Figure 11

Home - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://elearning.edvantage.net/Home.jsp?type=standard&content=ChangePasswordContent.jsp

Edvantagegroup

- Home
- My courses
- All courses
- Help
- Logout

Change password

To change your password, please enter your old password and the new password twice.

The new password must be at least 6 characters long and contain at least one upper case letter, one lower case letter and one digit.

Enter your old password:

Enter your new password:

Retype your new password:

Done Internet

Figure 12

Home - Microsoft Internet Explorer

File Edit View Favorites Tools Help

Address http://elearning.edvantage.net/Home.jsp?type=standard&content=UpdateUserProfileContent.jsp

Edvantagegroup

- Home
- My courses
- All courses
- Help
- Logout

Update user profile

Here you can update the information about yourself stored by the system. Mandatory fields are indicated by a red asterisk.

Username: livk

First name: (Liv)

Last name: (Kristensen)

Email address: (livk@edvantagegroup.com)

Language: ☒ English

Time zone:

Enter your password and press Update to complete the operation.

Password:

Done Internet

THIS PAGE BLANK (USPTO)

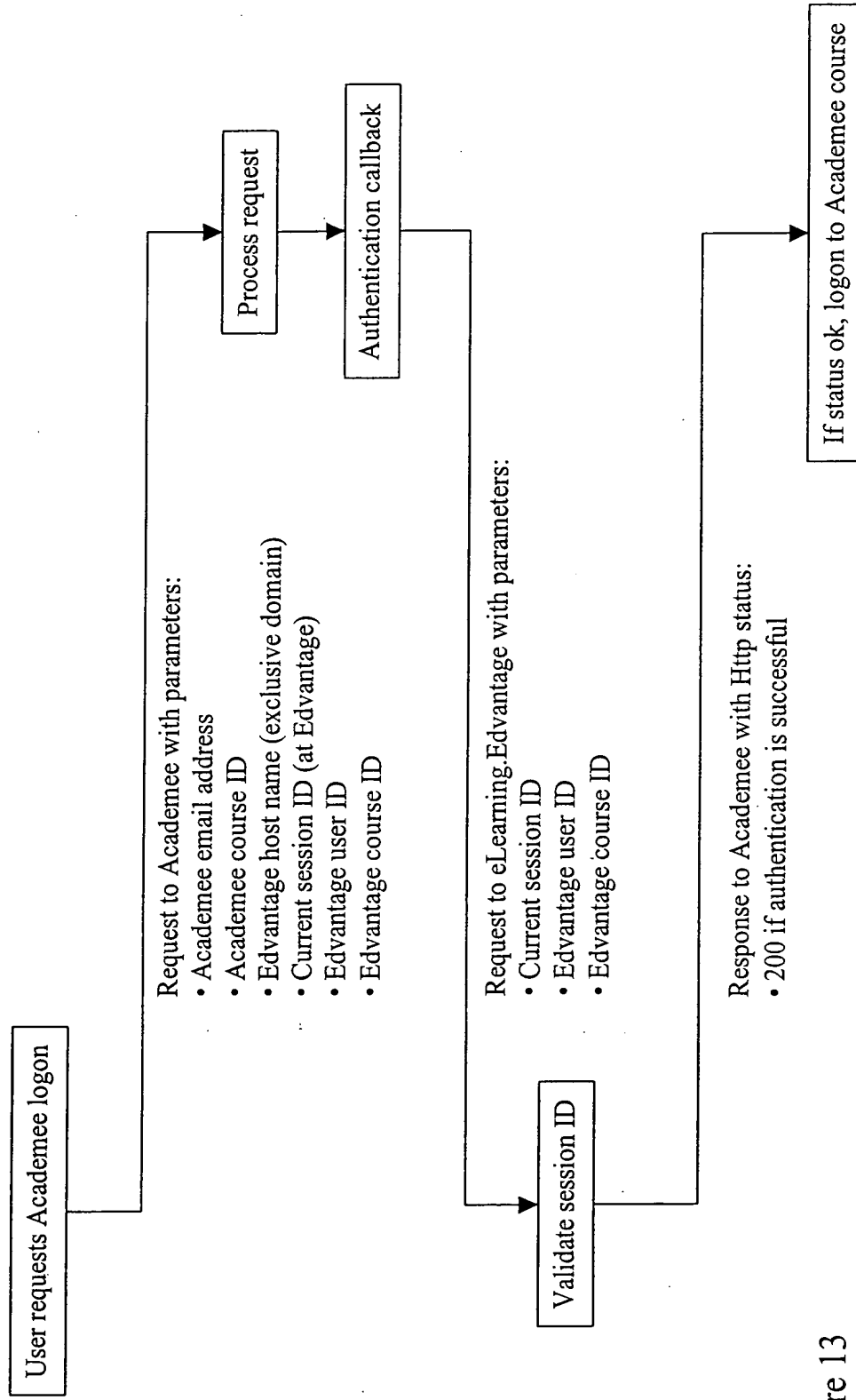


Figure 13

THIS PAGE BLANK (USPTO)

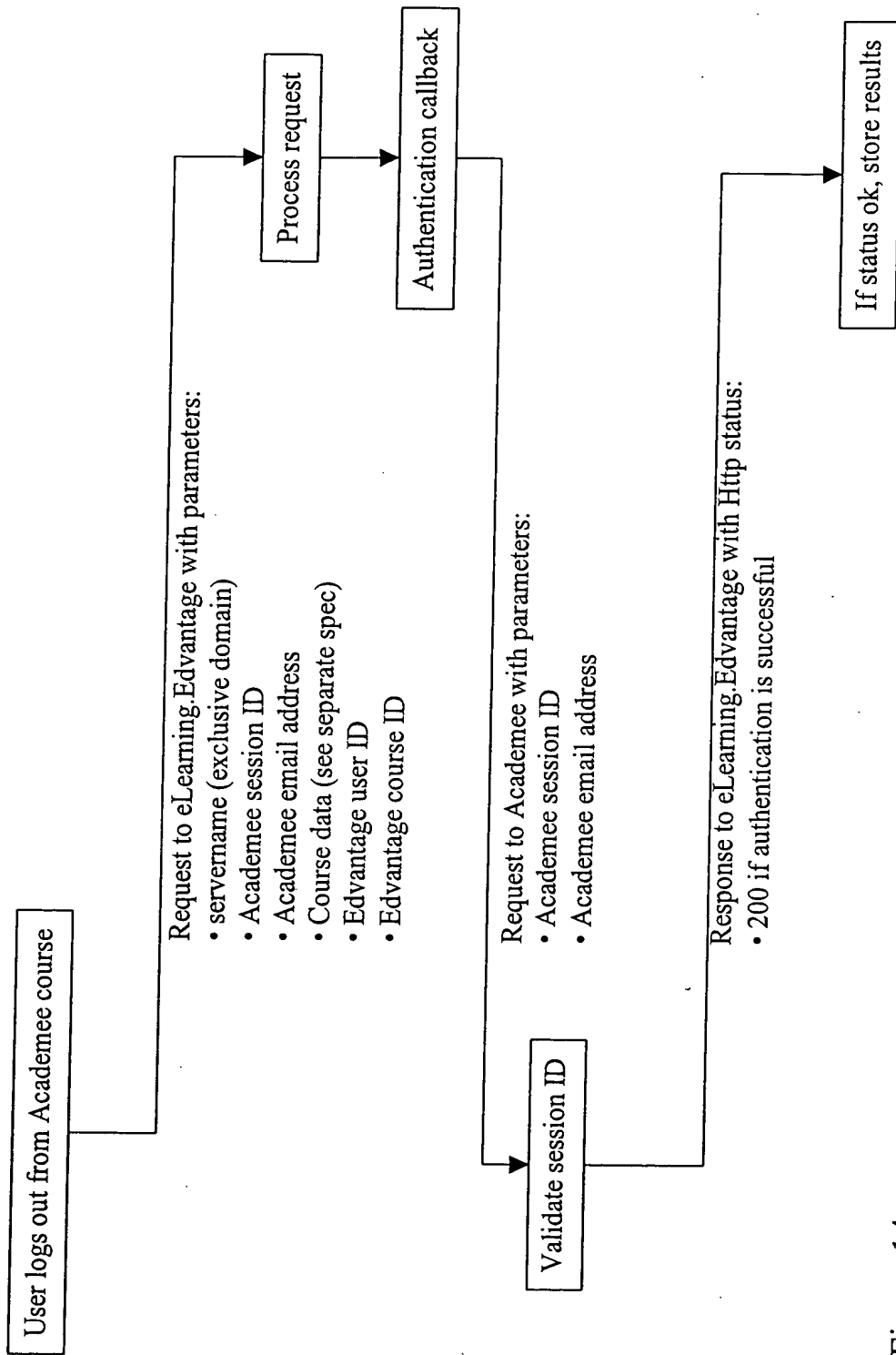


Figure 14

THIS PAGE BLANK (USPTO)

**This Page is Inserted by IFW Indexing and Scanning
Operations and is not part of the Official Record**

BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images include but are not limited to the items checked:

- ☒ **BLACK BORDERS**
- ☒ **IMAGE CUT OFF AT TOP, BOTTOM OR SIDES**
- ☐ **FADED TEXT OR DRAWING**
- ☐ **BLURRED OR ILLEGIBLE TEXT OR DRAWING**
- ☐ **SKEWED/SLANTED IMAGES**
- ☐ **COLOR OR BLACK AND WHITE PHOTOGRAPHS**
- ☐ **GRAY SCALE DOCUMENTS**
- ☒ **LINES OR MARKS ON ORIGINAL DOCUMENT**
- ☐ **REFERENCE(S) OR EXHIBIT(S) SUBMITTED ARE POOR QUALITY**
- ☐ **OTHER:** _____

IMAGES ARE BEST AVAILABLE COPY.

As rescanning these documents will not correct the image problems checked, please do not report these problems to the IFW Image Problem Mailbox.

